

Listing of Claims

5 No amendments have been made to any claim in this response. This listing is included in the response for continuity across application documents and as a convenience to the Examiner.

This listing of claims will replace all prior versions, and listings, of claims in the application.

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Claim 1 (previously presented): An optical disc recording apparatus comprising:
a laser diode driven according to a write strategy generator to generate a multi-pulse light pulse having a fixed-duty ratio with two power levels during APC mode;
a photodiode for generating output voltage according to a sensed power of the light
15 pulse;
a signal processor for averaging the generated output voltage;
at least one sample and hold circuit coupled to the signal processor for sampling and holding the average generated output voltage according to a sample and hold signal; and
an Endec controller, coupled to the write strategy generator, for generating an APC
20 mode signal and a predefined NRZI pattern selected according to a relationship between recording speed and a bandwidth of the photodiode;
wherein the power of the laser diode is controlled according to held average generated output voltage occurring during the APC mode.

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Claim 2 (original) The optical disc recording apparatus of claim 1 wherein the signal processor for averaging the generated output voltage is a low pass filter.

Claim 3 (previously presented): The optical disc recording apparatus of claim 1 further comprising a sample and hold signal generator connected to the Endec controller for generating the sample and hold signal when the average generated output voltage has substantially stabilized.

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Claim 4 (previously presented): The optical disc recording apparatus of claim 3 wherein the at least one sample and hold circuit is connected to the low-pass filter and to the sample and hold signal generator for sampling and holding the average generated output voltage according to the sample and hold signal.

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Claim 5 (original): The optical disc recording apparatus of claim 4 wherein the average generated output voltage held by the sample and hold circuit is multiplied by a predetermined coefficient to control the power of the laser diode.

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Claim 6 (original): The optical disc recording apparatus of claim 5 wherein the predetermined coefficient is equal to the inverse of the fixed-duty ratio.

Claim 7 (original): The optical disc recording apparatus of claim 1 wherein the fixed-duty ratio is less than one.

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Claim 8 (original): The optical disc recording apparatus of claim 1 wherein the Endec controller initiates the APC mode exclusively within predefined APC areas of the optical disc.

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Claim 9 (original): The optical disc recording apparatus of claim 1 wherein the laser diode utilizes a Blu-ray, Rewritable standard.

Claim 10 (previously presented): A method for controlling laser power in an optical disc

- recording apparatus, the optical disc recording apparatus comprising a laser diode, a photodiode, and an Endec controller, the method comprising:
- initiating an APC mode utilizing the Endec controller;
- generating a multi-pulse light pulse having a specific pattern according to the relative relationship between recording speed and response of the photodiode, a predetermined fixed-duty ratio, and two power levels with the laser diode during the APC mode;
- generating photodiode output voltage according to the sensed power of the generated multi-pulse light pulse during the APC mode;
- substantially averaging the photodiode output voltage utilizing a signal processor; and
- utilizing the substantially averaged photodiode output voltage to control power of the laser diode.
- 15 Claim 11 (original): The method of claim 10 wherein the predetermined fixed-duty ratio is less than one.
- Claim 12 (original): The method of claim 11 wherein the substantially averaged photodiode output voltage multiplied by the inverse of the fixed duty ratio is compared to a target power for controlling the power of the laser diode.
- 20 Claim 13 (original): The method of claim 10 wherein the optical disc recording apparatus further comprises a write strategy generator connected to the Endec controller for causing the laser diode to generate the multi-pulse light pulse during the APC mode.
- 25 Claim 14 (original): The method of claim 10 wherein the generated multi-pulse light pulse is a first multi-pulse light pulse utilized to measure write power or a second multi-pulse light pulse utilized to measure erase power.

Claim 15 (original): The method of claim 10 wherein the Endec controller initiates the APC mode exclusively within a predefined APC area of the optical disc.

- 5 Claim 16 (original): The method of claim 10 wherein the optical disc recording apparatus utilizes a Blu-ray Disc, Rewritable standard.

Claim 17 (original): The method of claim 10 wherein the signal processor for averaging the photodiode output voltage is a low pass filter.

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Claim 18 (previously presented): A method for controlling laser power in a Blu-ray optical disc recording apparatus when in APC power control mode, the Blu-ray optical disc recording apparatus comprising a laser diode for generating multi-pulse light pulses and a photodiode outputting a measured power of the light pulses, the method comprising:

- 15 controlling an NRZI pattern encoder to generate a predetermined power control pattern according to the relative relationship between recording speed and response of the photodiode;
- controlling a write strategy generator to generate write strategy to a laser diode driver such that the laser diode outputs multi-pulses having a fixed-duty ratio with two power levels;
- 20 sampling and holding an average output of the measured power of the light pulses, the average output of the measured power obtained utilizing a signal processor; and
- 25 controlling the laser diode power level according to predetermined present levels and the held average output of the measured power of the light pulses.

Claim 19 (original): The method of claim 18 wherein the fixed-duty ratio is less than 1.

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Claim 20 (original): The method of claim 19 wherein the signal processor for averaging the output of the measured power of the light pulses is a low pass filter.

Claim 21 (original): The method of claim 19 wherein the laser diode power level is
5 controlled according to the predetermined present levels and the held average output of the measured power of the light pulses multiplied by the inverse of the fixed-duty ratio.